



Ethno-Medicinal Climber plants of Sanjay Dubri Tiger Reserve Sidhi (M.P.)

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ABSTRACT-

Plants are necessary for human civilization. Plant biodiversity is the best gift of nature, the area whose biodiversity is dense; it is considered to be equally rich in nature because all the needs of man are fulfilled by this diversity. The area on earth in which the natural conditions (rainfall, temperature, pressure, soil, and humidity) remain favorable throughout the year. There are more forestial biodiversity found in SDTR national park in sidhi district.

In Madhya Pradesh state have 12 national parks and 25 wild life sanctuaries are established, one of the most national park 'Sanjay Dubri Tiger Reserve' is located in Kusmi and Majhauili blocks of Sidhi district. It is the birth place of the first white tiger 'Mohan'. The natural climates have provides favorable condition for plant biodiversity, The SDTR forest mainly known for monotypic Saal (*Sorea robusta*) forest but abundance of other tall trees likes- Tendu, Sagaun along with and various medicinal vines are available in this region. In SDTR forest available various types of climber plants such as- Giloy, Khanima, Garadu, Ghunguchi, Satavar, Amarbel and Indrayan other vines are used for preparation of traditional medicine. Sanjay Dubri Tiger Reserve is divided into two zone- Core zone and Buffer Zone. Core zone is strictly prohibitive areas for civilian but Buffer zone are recently encroached by local population mainly tribe's (Kol, Gond, Baiga, Panika) for habitat. Some local or outsider traditional healers are collects the vine's from SDTR buffer zone and prepare many types of unauthorized traditional drugs for various types of diseases.

Key words: SDTR, White Tiger, Climber, Traditional healers.

Introduction:

Madhya Pradesh state have covered the largest forest area in India, there are a huge reservoir of biodiversity. Madhya Pradesh state has situated 12 national parks and 25 wild life sanctuaries. One of the most popular National Parks "Sanjay Dubri Tiger Reserve" Sidhi (M.P.) is famous for the birth place of first white tiger 'Mohan'. SDTR is established in the south-east of the Kaimoor Mountain ranges, it is surrounded by uneven mountain ranges, due to its geographical position, and it receives maximum rainfall from the southwest weathers. Due to creation of these favorable conditions, many perennial rivers flows continuously in a year, this creates a

suitable environment for the growth of maximum plants biodiversity in this region. Availability of specific environmental conditions forced to thinking that perhaps as a result of the world's first white tiger 'Mohan' was born in this region, and caught from this at Pankhora Nala (Majhauri block) by Rewa Maharaja 'Martand Singh Joo Dev' on 27 May 1951. In recent time, all the species of white tiger found over the worlds may be related to its descendants.

Sanjay National Park was established in 1975, it was connected with two states Madhya Pradesh and Chhattisgarh. Mainly Sidhi, Singrauli and Shahdol districts were attached in Madhya Pradesh and Korea district in Chhattisgarh. Madhya Pradesh state had separated from Chhattisgarh on the date of 01/11/2000. Guru Ghasidas National Park was established in Chhattisgarh after the separation of SDTR.

The Sanjay Dubri National Park was declared as Tiger Reserve in 2008. It remains open for tourists from 1 October to 30 June. Parsili Resorts of Madhya Pradesh Tourism Department has traditionally been built on the concept of rural environment for tourists to stay. The panoramic view of the forest areas, the natural shade easily attracts the tourists, as well as the continuously flowing 'Banas River' on its banks gives its own distinct experience of aquatic biodiversity.

The environment of this area is very favorable for plant biodiversity, so that, there is abundance of Sal trees in this reserve as well as sufficient diversity is found in the climbers which are used in various forms by the forest dwellers living.

“Plants that perform the function of climbing on the basis of some other shelter are called Climbers.”

Climber plants are classified according to the its characters as follow-

1. Twiners (Stem climber)
2. Tendril climber
3. Root climber
4. Scramblers, stem spin and hook climber
5. Lina

Madhya Pradesh is also known as tribal state of the country. In this state mainly lived tribes such as Gond, Kol, Baiga, and Panika in nearby forest region and utilized many climbers as a nutritive food as well as medication purposes.

In these region many types of ethnic groups, which is still deprived of modern amenities. During the survey research, we have found that no facilities are available in recently like access roads, electricity and hospitals, so that residents depends on nature and natural sources. Tribal people get their many medicinal needs fulfilled from these ascending plants and keep themselves healthy as well as benefit other people from this traditional knowledge.

Study Sites:

Sanjay Dubri national park mainly consists of 2 zones- Core zone and Buffer zone. Our research study is mainly focused on the buffer zone of Sanjay Dubri Tiger Reserve (SDTR). The SDTR has divided in 4 ranges as follows- Dubri range, Bastua range, Pondi range and Mohan (Kusmi) range. It is categorized by land structure like low land, middle land and high land. We have observed the large populations of ethno-climber plants in SDTR region, because the climatic conditions are very rich for the development of biological diversity, as a result of which the diversity of climber plants is sufficiently recorded in survey and study.

The climate of this area is balanced in winter and summer seasons because dense plants availability is maintained the favorable temperature during the season compare to other districts temperature variation. The distribution of wild plants in the Sanjay Dubri National Park is saal (*Sorea robusta*) dominant forest but various types of herbs and climbers are scattered in different region of SDTR. In SDTR two major grasslands are situated in core zone. Almost farmers are cultivating traditional crops in these regions. During the survey work we have observed the various types of climber diversity in SDTR forest in all the range who is described above.

Material & Methods:

Our study is based on the Sanjay Dubri Tiger Reserve in Sidhi district located in the northeast of Madhya Pradesh. We have visited in SDTR sidhi from December 2019 to December 2021 after the permission of Principal Chief Conservator of Forests and Chief Conservator of Forest, Sanjay Dubri Tiger Reserve sidhi, Madhya Pradesh. In this research, we have studied the many areas of SDTR core and buffer zone according to requirement for sample survey from time to time and collects the information with local names as well as botanical name of ethno-climber plants through known or literate persons and traditional healers of these resident population and know the basic medicinal importance to used for the treatment of some relative diseases, and process of ingestion of herbal medicine for specific vine part with diseases. This research (ethno medicinal) is done by the using a methods who is suggested by Jain and Goel (1995). The herbarium file is prepared on the basis of standard protocol.

Result and Discussion:-

Survey research of the Sanjay Dubri Tiger Reserve district sidhi (M.P.) we have observed various types of medicinal vine's (climber) plants are spread with special medicinal properties have been seen and these vine's are collected by traditional healers of Sidhi or other districts who are involved in formation of their traditional medicinal purposes like- Kadha, Pastes, Juices, and others form of extract are applies for oral ingestion or external uses in different diseases.

List of climber plants given below with scientific name, family name and their medicinal properties.

Details of Climber plants

S. No.	Local Name	Botanical Name	Family	Used Part	Medicinal importance
1	Satavar (□□□□□)	<i>Asparagus recemosus</i>	<i>Asparagaceae</i>	Root	Satavar is a shrubby vine found in the low water areas of the Sanjay Dubri Tiger Reserve. It is a desert plant mainly found in calcareous soils with low water holding. This plant is used by local healers to treat insomnia, chronic kidney stones, night blindness, and night dreams. Along with this, it is used in the form of tonic and powder for strengthening and milking in women and to increase sexual stamina.
2	Giloy (□□□□□)	<i>Tinospora cardifolia</i>	<i>Menispermaceae</i>	Stem	This climber is also called Amrita (like nectar) because this climber alone helps to get rid of many serious to severe diseases. Its most special thing is that whatever tree it grows by clinging to; many of the medicinal properties of that tree get absorbed in the medicinal properties of Giloy. According to Ayurveda, all three parts of Giloy's leaves, roots and stem are very beneficial for health, but the stem or stalk of Giloy is most used in the treatment of diseases. Antioxidants are found in large quantities in Giloy as well as it has anti-inflammatory and anti-carcinogenic properties. Because of these properties, it gives relief from fever, jaundice, arthritis, diabetes, constipation, acidity, indigestion, urinary diseases etc. There are very few medicines which control all three Vata, Pitta and Kapha.
3	Khaneema (□□□□□)	<i>Dioscorea alata</i>	<i>Dioscoreaceae</i>	Under-ground stem	Khanima is a perennial climber found in everywhere in the rural and hilly areas which is produced in most of the places during the rainy season. Its main medicinal use is in reducing bleeding in piles, in the treatment of leprosy, in the treatment of mental illness, in reducing cholesterol level and in preventing cancer.
4	Amarbel (□□□□□□)	<i>Cuscuta reflexa</i>	<i>convonvulaceae</i>	Whole plant	Amarbel is a columnar parasitic climber that depends on other tree plants. It has special importance in Ayurveda. Amarbel is used in brain disease, eye disease, piles, liver disease, vaginal disorder, skin disease, and kidney disease and blood purification.
5	Doodhi (□□□□□)	<i>Pergularia daemia</i>	<i>Apocynaceae</i>	Whole plant	Plant extract is used for Antifertility activity, ulcers, uterine menstrual complaints and leaves are useful in

					leprosy and haemorrhoids.
6	Kunduroo (□□□□□ □□)	<i>Coccinia grandis</i>	<i>Cucurbitaceae</i>	Fruits	The leaves of <i>Coccinia grandis</i> are used in anti-diabetic, skin diseases, urinary tract disorders, and increased digestive capacity. The fruits of <i>Coccinia grandis</i> are used in the treatment of liver disease and tuberculosis.
7	Kemachh (□□□□□)	<i>Mucuna pruriens</i>	<i>Fabaceae</i>	Fruits	<i>Mucuna pruriens</i> seed is mainly beneficial in reducing harmful cholesterol (LDL) in the body, as well as reduced obesity, and good effect against anti-epileptic, anti-depressant, antidiabetic agent, infertility and Parkinson's disease.
8	Hadjor (□□□□□)	<i>Cissus quadrangularis</i>	<i>Vitaceae</i>	Whole plant	Harjod is a perennial creeper plant which is found in abundance in the forests and residential areas of Kusmi block. The traditional healers of this block are using this medicinal vine mainly in the treatment of bone fractures, bone diseases and epilepsy. Apart from this, it is used to cure blindness, in piles and in the treatment of irregular menstrual cycle disease.
9	Sem (□□□)	<i>Lablab purpureus</i>	<i>Fabaceae</i>	Fruits	<i>Lablab purpureus</i> is mainly used in ringworm, stomach pain and heart diseases. In <i>Lablab purpureus</i> has been found antimicrobial, anti insecticidal, anti diabetic and anti cancerous properties.
10	Dudhali (□□□□□)	<i>Hemidesmus indicus</i>	<i>Apocynaceae</i>	Whole plant	<i>Hemidesmus indicus</i> is a climber plants found in rainy season. It is traditionally used for curing Kidney disease, treatment of weak digestion, and loss of appetite, tridosha (Vata-Pitta-Kapha), leucorrhoea and diarrhoea. Its root is also used for the Prevent abortion, remove urine and semen related disorders, in leucorrhoea or leucorrhoea, also beneficial in tuberculosis (TB), headache, loss of appetite, diarrhea, swelling and jaundice. Its root is force enhancing and also aphrodisiac. Many traditional healers are recommended for its medicinal purposes.
11	Karaila (□□□□□)	<i>Momordica charantia</i>	<i>Cucurbitaceae</i>	Whole plant	Bitter gourd is an annual vine which has been used since ancient times as a medicine for different diseases. There is an abundance of nutrients in bitter gourd. The medicinal use of bitter gourd juice is useful in the treatment of throat swelling, respiratory diseases and ear pain. Apart from this, it is used in the treatment of various diseases like stomach disorders, treatment of ringworm, skin diseases, burning sensation of the soles, mouth ulcers and

					pneumonia. At recent time, bitter gourd's fruit and leaves are used in diabetes. It enhances the production of insulin by healing the pancreatic gland.
12	Lal Ghunghuchi (□□□□ □□□□□ □□)	<i>Abrus precatorius</i>	<i>Fabaceae</i>	<i>Stem and fruits</i>	Ghunghuchi (<i>Abrus precatorius</i>) is used in the treatment of migraine. The plant extract of <i>Abrus precatorius</i> has been found anti-carcinogenic and anti-tumorous properties. A decoction of dried roots of the Ghunghuchi (<i>Abrus precatorius</i>) is used in the treatment of hepatitis and bronchitis.
13	Mahulayine (□□□□□□ □)	<i>Bauhinia vahlii</i>	<i>Fabaceae</i>	<i>Root</i>	The flowers are used for leucorrhoea in piles, the bark of the stem in cold sores, and the root and stem for smallpox. The dried buds are used in the treatment of piles, dysentery, diarrhea and worms. The bark juice is used in the treatment of abdominal diseases. The root is used as a remedy for snake venom.
14	Batilaha (□□□□□□)	<i>Aristolochia indica</i>	<i>Aristolochiaceae</i>	<i>Leaf, root and seed</i>	It is an endemic endangered medicinal vine whose seeds are used in respiratory diseases, and as a vaginal stimulant. The root of <i>Aristolochia indica</i> is used for malaria and snake bite. The leaf is used for skin diseases, fungal infections, bacterial infections, intestinal ulcers, ulcers and leprosy.
15	Gurmar (□□□□□□)	<i>Gymnema sylvestre</i>	<i>Apocynaceae</i>	<i>Leaf</i>	It is a perennial medicinal vine, which is used in diabetes, heart disease, reducing cholesterol, reducing weight, and also useful in swelling and inflammation. Apart from this, leaves are used in obesity and arthritis.
16	Jangali Moong (□□□□□ □□□□)	<i>Vigna trilobata</i>	<i>Fabaceae</i>	<i>Leaf and fruits</i>	It is a seasonal creeper which is found in wild and fallow land. Its leaves are used in arthritis, in eye diseases, as a coolant, in urinary disorders, as a tonic in asthma. Its fruit is useful in cough, diarrhea, fever, piles, and dysentery. Its root is used for tuberculosis. In India, as an indigestion suppressant, to purify the blood and to reduce liver fibrosis.
17	Panchpatiya (□□□□□□ □□)	<i>Ipomoea pestigridis</i>	<i>Convolvulaceae</i>	<i>Leaf</i>	Its root and seeds are used in constipation, arthritis and leprosy.
18	Kalihari (□□□□□ □□)	<i>Gloriosa superba</i>	<i>Liliaceae</i>	<i>Fruits</i>	It is used in rheumatism, skin diseases and respiratory diseases.
19	Padora (□□□□□)	<i>Momordica Dioica</i>	<i>Cucurbitaceae</i>	<i>Fruits</i>	It is a seasonal medicinal vine whose roots of the male plant are used to remove snake bite, scorpion bite, sugar, anti-carcinogenic and pyorrhea. Its roasted seeds are used in eczema and skin diseases.

					Leaf juice is used in pain reliever syrup.
20	Money plant (□□□□□ □□□□)	<i>Epipremnum aureum</i>	<i>Araceae</i>	<i>Leaf</i>	According to FengShui theory, it is a perennial ornamental plant which is actively helps in air purification and oxygenation. Apart from this, it proves helpful in removing anxiety, tension, insomnia etc.
21	Amaraula (□□□□□□)	<i>Ampelocissus latifolia</i>	<i>Vitaceae</i>	<i>Tuberous root</i>	It is a wild bushy medicinal vine known as wild grapes. It is used in bone healing, leucorrhoea, dental problems, stomach pain, tuberculosis, strengthening bones and dysentery.
22	Pahadh bel (□□□□□□ □)	<i>Cissampelos pareira</i>	<i>Menispermaceae</i>	<i>Roots</i>	This hill small medicinal vine is used as an Ayurvedic herb in piles, skin diseases, menstrual cycle problems, hormonal imbalance, kidney stones, heart problems, and gout.
23	Hirankhuri (□□□□□□ □□)	<i>convolvulus arvensis</i>	<i>Convolvulaceae</i>	<i>Root and Resin</i>	It is a medicinal creeper found everywhere, which can be seen in sufficient quantity from November to June. It is used in diarrhea, in the digestive system, in diabetes, in increasing the functioning of the kidneys, in skin diseases, in dysentery, and in urinary diseases.
24	(Lauki) □□□□	<i>Lagenaria siceraria</i>	<i>Cucurbitaceae</i>	<i>Fruit</i>	Bottle gourd is also known as milk gourd, it is a perennial plant, and it cures blood glucose level, urinary tract infection and also reduced the cholesterol level. Bottle gourd juice reduces uric acid, purifies the blood and removes toxins from the body.
25	(Kheera) □□□□	<i>Cucumis sativus</i>	<i>Cucurbitaceae</i>	<i>Fruit</i>	Cucumber is a perennial vine in which phyto-nutrients are present, along with vitamin B, vitamin C and vitamin K, minerals like sodium, copper, amino acids, carbohydrates, fiber, biotin, phosphorus, magnesium and silica are found. Cucumber compensates for the lack of water in the body, increases immunity, increases the ability to fight against cancer, improves digestion, reduces the blood sugar level, strengthens bones as well as controls blood pressure level.

Area of the Sanjay Dubri Tiger Reserve:-

The SDTR is scattered over in 1674.511 square km. which is covered sidhi, singrauli and sahdol district. It is also connected with Guru Ghashidas National Park in district of Sarguja, Chhattisgarh state. Sanjay National Park is

situated under the Buffer zone of SDTR and major tourist place of Sidhi district known as Parsili resort, persili, majhauri. Different types of vegetations are seen in this national park because various perennial rivers like Gopad, Banas and Mahan flows through this reserve as well as national park.

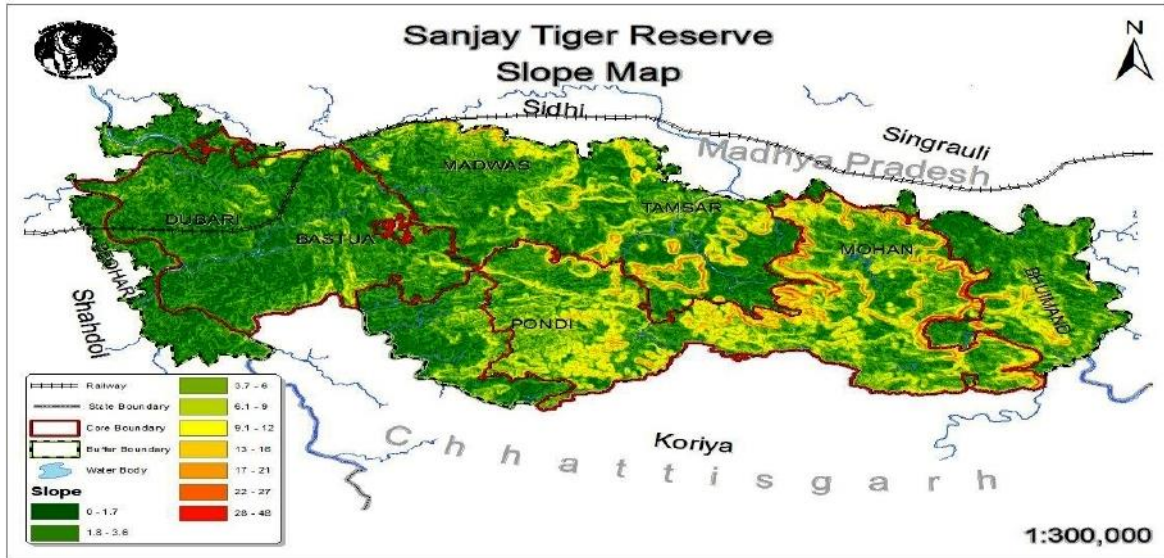


Figure 1- Map of SDTR

Occurrence frequency of climber plants-

The Sanjay Dubri Tiger Reserve is a conserved forest area for different types of wild animals specially Tiger. Due to this reason no any floras are disturbed by forest department and villagers. So that many types' floras are conserved in this region which is used by several traditional healers for treatment of various diseases. But some buffer zone areas are encroaching by the civilian whose are disturbed some floras for living purposes. After the survey research we have found some specific wild vine's plants like- Giloy, Satavar, Harjod, Gudmar, Kalihari, Ghunghoochi, amarbel, Kemachh, Jangli Moong and Mahulayeen, Paharbel etc. are scattered in rich amount in SDTR buffer zone as well as core zone. Some domesticated vine's like Kheera, Khaneema, Koondroo, Padora, karaila, lauki and some others are cultivated by residents we have already seen in SDTR Buffer zone which is used for traditionally ethno medicinal purposes.

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केमाछ (*Mucuna pruriens*)



गिलोय (*Tinospora cardifolia*)



गुडमार (*Gymnema sylvestre*)



अमरबेल (*Cuscuta reflexa*)



सतावर (*Asperagus racemosus*)



कुंदरु (*Coccinia grandis*)



Harjod (Cissus quadrangularis)

Figure 2- wild Climber plants in SDTR

List of wild Climber in Percentage

S.No.	Name of wild climber	Occurrence Frequency in Percentage (%)
1	□□□□□ (<i>Asperagus racemosus</i>)	15
2	□□□□□ (<i>Tinospora cardifolia</i>)	20
3	□□□□□□ (<i>Gymnema sylvestre</i>)	10
4	□□□□□□ (<i>Mucuna pruriens</i>)	7
5	□□□□□□□ (<i>Bauhinia vahlii</i>)	5
6	□□□ □□□□□□□ (<i>Abrus precatorius</i>)	6
7	□□□□□□□□ (<i>Gloriosa superba</i>)	5
8	□□□□□ (<i>Cissus quadrangularis</i>)	8
9	□□□□□□□□ (<i>Coccinia grandis</i>)	5
10	अमरबेल (<i>Cuscuta reflexa</i>)	10
11	□□□□□ (<i>Hemidesmus indicus</i>)	5
12	□□□□□□ (<i>Aristolochia indica</i>)	4

(According to working plant records 2019-2020 of forest Department sidhi)

Occurrence Frequency in Percentage (%)

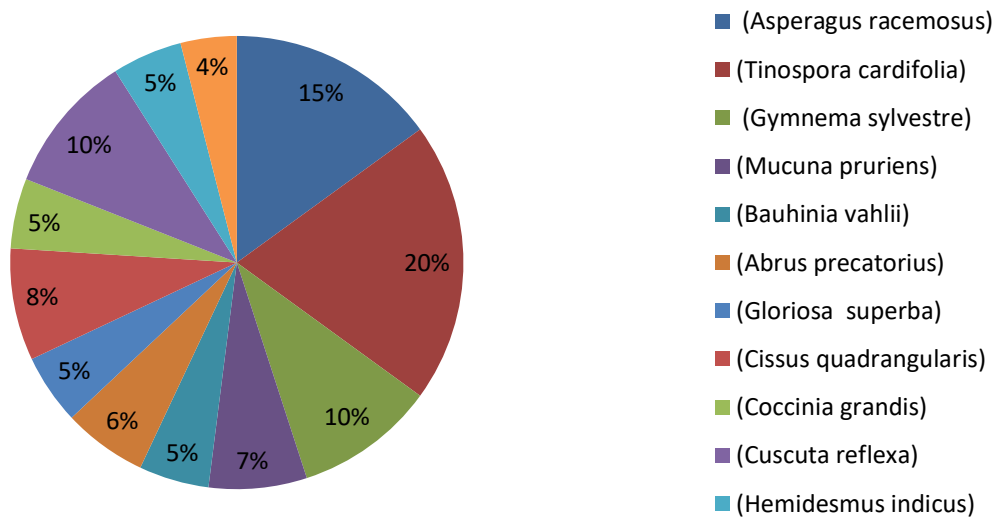


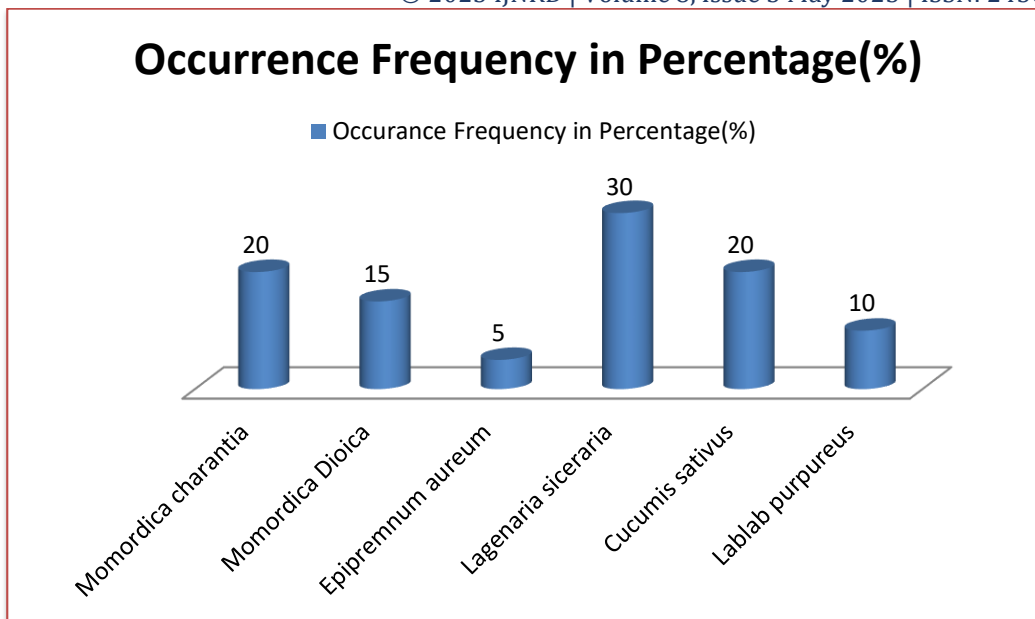
Figure 3- Pie Chart of wild Climber plants in SDTR

List of Domestic Climber's in Percentage (%)

S.No.	Name of Domestic Climber	Occurrence Frequency in Percentage (%)
1	□□□□□ (<i>Momordica charantia</i>)	20
2	□□□□□ (<i>Momordica Dioica</i>)	15
3	□□□□□□□□□ (<i>Epipremnum aureum</i>)	5
4	□□□□ (<i>Lagenaria siceraria</i>)	30
5	□□□□ (<i>Cucumis sativus</i>)	20
6	□□□ (<i>Lablab purpureus</i>)	10

(According to working plant records 2019-2020 of Horticulture Department)

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Name of Domestic Climber's

Figure 4- Chart of Domestic Climber plants in SDTR

Traditional healers are frequently used some climbers for treatments and Satisfactory results seen in patients.

S.No.	Name of frequently used Climber for treatments	Botanical name	Satisfactory results with Disease in	Satisfactory results percentage (%)	Name of Traditional Healers
1	□□□□□	(<i>Asperagus racemosus</i>)	Strengthening, and improve sexual stamina	70	Laldev singh (Kusmi)
2	□□□□□	(<i>Tinospora cardifolia</i>)	Fever, jaundice, and arthritis	90	Heeralal Agariya (Rauhal)
3	□□□□□□□	(<i>Gymnema sylvestre</i>)	Diabetes and heart disease	65	Bechan Singh, Bastua(Kusmi)
4	□□□□□□	(<i>Cissus quadrangularis</i>)	Bone diseases and epilepsy	80	Bhagwan Singh (Rauhal)
5	□□□□□□	(<i>Aristolochia indica</i>)	Poisonous insects biting and skin diseases	75	Tejbali Singh (Tamsar)
6	□□□□□□□	(<i>Gloriosa superba</i>)	Rheumatoid and Respiratory disease	75	Raj vaidya (Joba-Majhauri)
7	□□□□□□□	(<i>Bauhinia vahlii</i>)	Piles	80	Indrabhan Yadav (Joori)
8	□□□□□	(<i>Hemidesmus indicus</i>)	Leucorrhoea and diarrhoea	90	Bechan Singh, Bastua(Kusmi)
9	□□□□□□	(<i>Momordica Dioica</i>)	Eczema and skin diseases	60	Heeralal Agariya (Rauhal)
10	□□□ □□□□□□□	(<i>Abrus precatorius</i>)	Migraine	75	Bechan Singh, Bastua(Kusmi)

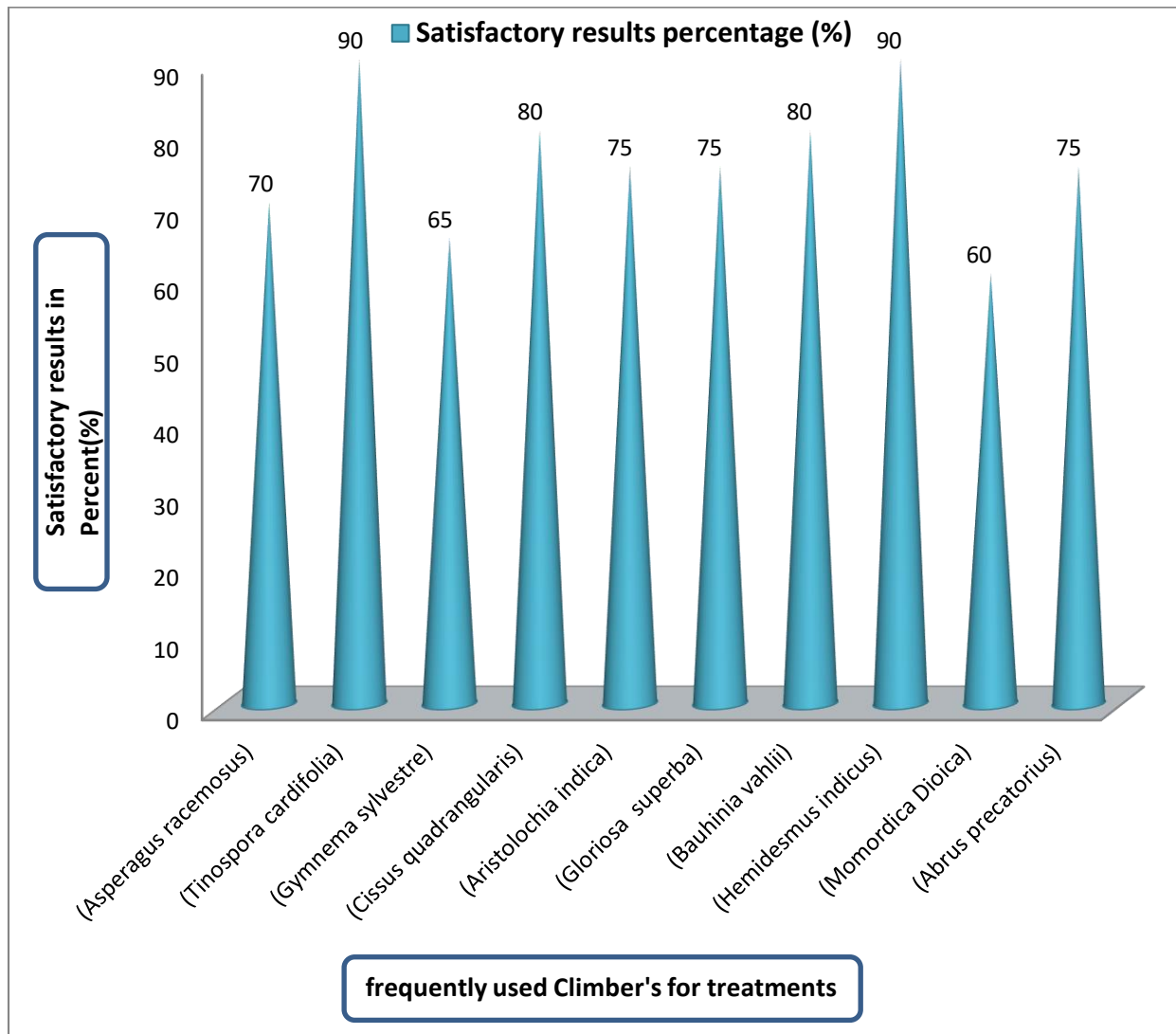


Figure 5- Chart of Satisfactory results with Disease in Percentage

Frequently used vines are giving the most satisfactory results in various types of diseases. we have getting the information from many patients who are suffering with various difficulties with health issues like- Rheumatoid, Diabetes, Blood pressure, arthritis, leucorrhoea, epilepsy and some others women diseases, after the intake traditional medicine from traditional healer's they are getting relief with diseases and mentally satisfy with medicine. Some patients who are suffering from critical disease likes- cancer, leukoderma, fungal infection, and leprosy and ovarian infected related to women's are show believeness with traditional medicines are prepared by wild or domesticated climbers.

Conclusions-

Sanjay Dubri Tiger Reserve sidhi (M.P.) is spread over Sidhi, Singrauli, and Sahdol districts located in the northeast of the Madhya Pradesh state. In this region maximum rainfall is recorded at the state, because in this region many perennial rivers flows throughout the year and maximum plant diversity is located. In SDTR, region abundance habitat of Scheduled tribes and Scheduled Caste populations around it, whose livelihood depends on

these forest or its products. During the research work, it was seen how vines are used by them in the treatment of various diseases and people living near nearby forest remain healthy by using medicines made from these.

we have concluded from the our study that if the knowledge of their traditional medicine is further promoted and disseminated, then the treatment of many critical diseases with their knowledge will prove effective for humans as well as animals. Awareness will generates in people will be attracted towards Ayurveda. Attention will be attracted and biodiversity conservation will be strengthened.

Acknowledgement-

We are thankful to MP State Biodiversity Board Bhopal to sanction and giving us permission to study Biodiversity of Kusmi region of sidhi district (M.P.). We extend our warm thankfulness to Mr. Kshitij Kumar sir; DFO Sidhi and Dr. Gaurav Singh, technical expert who has provides valuable advice from time to time.

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